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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,698	12/27/2001	Naganori Numao	21776/0066	9270
30678	7590	08/03/2004	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP SUITE 800 1990 M STREET NW WASHINGTON, DC 20036-3425			LY, CHEYNE D	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/026,698

Applicant(s)

NUMAO, NAGANORI

Examiner

Cheyne D Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on February 17, 2004, and May 26, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-10, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) 4-10, 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☒ Claim(s) 3-10, 14 and 15 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/27/2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's election of Group I, filed February 17, 2004, and natural-type specie, filed May 26, 2004, have been acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. The cancellation of claims 1, 2, and 11-13 has been acknowledged.
3. Claims 4-10, 14, and 15 have been withdrawn due to being not directed to the elected Group.
4. Claim 3, natural-type specie, is examined on the merits.

### **OBJECTIONS**

5. Claim 3 is objected to because of the following informalities: Claim 3, line 1, has a period between the terms "biological" and "functional" which is improper. Appropriate correction is required.
6. The title of the invention is not descriptive because the instant title is directed to prediction and utilization while the elected method is specifically directed to prediction. A new title is required that is clearly indicative of the invention to which the claims are directed.

### **CLAIM REJECTIONS - 35 U.S.C. § 112, SECOND PARAGRAPH**

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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9. Specific to the preamble, the recitation of a method for predicting biological function activity and/or binding causes claim 3 to be vague and indefinite because the rest of claim does recite any steps for “predicting biological function activity and/or binding.” It is noted that lines 3-14 recite steps that lead to proteins of similar characteristic frequency values which does not support the prediction of any type of biological function activity and/or binding. Therefore, it is unclear whether the preamble or the body of the claim determines the metes and bounds of said claim. Clarification of the metes and bounds is required.

10. Specific to line 8, the phrase “region academically corresponding” causes claim 3 to be vague and indefinite because it is unclear what criteria are being used to determine that a specific region is “academically” corresponding. Is it high GPA or SAT scores? Clarification of the metes and bounds is required.

#### **CLAIM REJECTIONS - 35 USC § 101**

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claim 3 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory algorithm type subject matter.

13. The elected invention has been reasonably construed as an algorithmic method being implemented in a generic computer system.

14. Claim 3 is rejected because said claim are directed to a method comprising algorithmic steps for analyzing protein and nucleotide data without any physical alteration step, which is considered to be non-statutory subject matter. “For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed

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process for digitally filtering noise employing the mathematical algorithm is statutory.” (MPEP § 2106 (IV)(B)(2) (b), part ii). Similar to the nonstatutory example above, the instant invention comprises algorithmic steps for analyzing protein and nucleotide without any physical alteration resulted from said analysis.

### **CLAIM REJECTIONS - 35 USC § 102**

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claim 3 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Veljkovic et al. (1985).

17. Veljkovic et al. discloses a method for determining biological function by analyzing each element of amino acid or nucleotide of macromolecules (natural-type) represented by the corresponding value of election-ion interaction potential (EIIP) (Abstract etc.).

18. For each member of an amino acid molecule and nucleotide molecule, EIIP data corresponding to each member in a series to the mth member (index) is subject to discrete Fourier analysis (DFT) (page 338, columns 1-2, Mathematical Basis §), as in instant lines 1-9.

19. One calculates the consensus spectrum for a group of sequences with similar biological function and different primary structure, one finds that strictly defined peak frequency correlates with the biological function (page 338, column 2, lines 47-58, and Figures 1-6), as in instant lines 10-13.

## **CONCLUSION**

20. NO CLAIM IS ALLOWED.

21. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

22. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

23. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Dune Ly, whose telephone number is (571) 272-0716. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

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25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (571) 272-0722.

C. Dune Ly  
7/26/04

*Ardin H. Marschel* 8/2/04  
ARDIN H. MARSCHEL  
PRIMARY EXAMINER